

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-8017
Exam Date: 11/01/2021

1. Current Owner:
THE NATURE CONSERVANCY 65 MC CLINTOCK RD MOYIE SPRINGS ID 83845-5013
2. Accompanied by: Kennon McClintock
Phone No: (208) 267-8999
Address: Same as above
Relationship to permit Holder: Representative of The Nature Conservancy

3. **SOURCE:**
UNNAMED STREAM

Tributary
SINKS

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
98-2119	BALL CREEK	IRRIGATION	LICENSE
98-7918	UNNAMED STREAM (X3), GROUNDWATER (X2)	WILDLIFE STORAGE, DIVERSION TO STORAGE	LICENSE

Comments: WR 98-2119 was from a prior owner of property, prior to development of wetland area, and not a concern for overlap. Applicant's prior WR 98-7918 uses 2ea GW sources & 3ea unnamed stream sources with a Wildlife Storage POU that overlaps this right's POU. This permit was necessitated for filing due to the diversion from a single unnamed stream POD enlarging WR 98-7918; as a result, condition X35 is incorporated in licensing this permit to cover overlapping diversion rate & diversion volume between WRs 98-7918 & 98-8017.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
98-7918	UNNAMED STREAM (X3), GROUNDWATER (X2)	WILDLIFE STORAGE, DIVERSION TO STORAGE	LICENSE

Comments: 1ea Unnamed stream POD in the NE¼ SE¼, Sec. 13, Twp 63N, Rge 01W for WR 98-7918 is the same POD as this permit. Condition F06 describes this shared POD between the two rights.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM NE¼ SE¼, Sec. 13, Twp 63N, Rge 01W, B.M. BOUNDARY County

Method of Determination: Arcmap and WR 98-7918 licensed GPS point used to designate this right's POD located at -116°23.790, 48°48.600 pump station with 50 hp pump.

PLACE OF USE: WILDLIFE STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
63N	01W	12		X L2	X	X L3	X	X	X	X	X	X	X	X	X	X	X	X	
63N	01W	13	X	X	X	X	X			X					X				

Method of Determination: Arcmap aerial imagery & WR 98-7918 backfile data were used to assign POD & POU.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

☒ Indicate weir size/pipe as applicable.☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.☒ Aerial Photo Attached (required for irrigation of 10+ acres).☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
PUMP STATION	CRISAFULLI	50			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: during field exam for WR 98-7918 measuring equipment was set up to complete flow measurements but was unable to collect accurate data. Applicants had a 36-inch pipe that was oversized and prevented "full pipe" conditions required to capture flow measurements. The pipe was at approximately half pipe volume, which caused inaccuracy in measuring device values. No measurement obtained.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: reference WR 98-7918, decision was made to use a factory pump curve to establish flow rate for licensing purposes. Pump curve identified a system pump capacity of 3,900 gpm; maximum Diversion Rate = 3,900 gpm (pump curve) / 448.83 gpm = **8.69 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses: See 3 each attached pond analysis worksheets.

- Wildlife Storage Volume = 202.4 af (shallow wetland pond volume area) + 502.4 af (medium depth wetland pond volume area) + 1116.0 af (deep depth wetland pond volume area) = 1820.8 af. Permit limited by approved maximum diversion volume = **369.0 af**; 1820.0 af volume will be used to compile condition X35 for licensing purposes.
- Maximum Diversion Rate = 3,900 gpm (pump curve) / 448.83 gpm = 8.69 cfs – 5.0 cfs (prior license 98-7918) = **3.69 cfs**

G. NARRATIVE/REMARKS/COMMENTS

This permit was developed by the applicant due to the diversion rate of their pump's capacity being larger than what prior right 98-7918 authorizes. A prior field exam was conducted on 7/19/2008, which validated the same POD and wetland wildlife storage POU used by the applicants for this permit's developed beneficial use. As such, adequate back file data from 98-7918, aerial imagery, and photographic evidence is on hand to perform and in-office exam toward licensing this permit.

The applicant developed their application for 98-8017 with the assistance of department staff, and the diversion rate of 3.69 cfs was selected due to it being the difference between their 50 HP pump capacity and what right 98-7918 authorized: 8.69 cfs (pump curve diversion rate) – 5.0 cfs (licensed WR 98-7918) = **3.69 cfs** which is recommended for licensing this permit. At the POD, the 50 HP pump diverts unnamed stream water to fill the wildlife storage area. Reference backfile beneficial use report & licensing documents for 98-7918 for detailed information. 1ea Unnamed stream POD in the NE¼ SE¼, Sec. 13, Twp 63N, Rge 01W for WR 98-7918 is the same POD as this permit. Condition F06 describes this shared POD between the two rights.

The wildlife storage POU is the same as covered under right 98-7918. During development of the application, the volume to be applied for was determined to be ancillary but required to license the storage beneficial use water right. The primary reason the applicant has applied is to fulfill additional diversion rate capacity. The maximum diversion volume recommended to license this permit is **369.0 af**. Arcmap aerial imagery was used to copy the wildlife storage POU shape for licensing purposes. Condition X35 was incorporated during licensing review to provide combined use limitations for annual volume between 98-7918 & 98-8017 stating that the two rights when combined shall not exceed 8.69 cfs nor a total annual maximum diversion volume of 1,820.0 af at the field headgate for wildlife storage use.

Condition 029 was removed from the permit during licensing review. Condition X35 was added as described above to mitigate overlap concerns between rights 98-7918 & 98-8017. All other conditions on the permit shall be carried forward to the license. Overlap concerns: WR 98-2119 was from a prior owner of property, prior to development of wetland area, and not a concern for overlap. Applicant's prior WR 98-7918 uses 2ea GW sources & 3ea unnamed stream sources with a Wildlife Storage POU that overlaps this right's POU. This permit was necessitated for filing due to the diversion from a single unnamed stream POD enlarging WR 98-7918; as a result, condition X35 is incorporated in licensing this permit to cover overlapping diversion rate & diversion volume between WRs 98-7918 & 98-8017. There are no additional overlap concerns for this water right.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
WILDLIFE STORAGE	01/01 to 12/31		369.0 AF
DIVERSION TO STORAGE	01/01 to 12/31	3.69 CFS	

Totals: 3.69 CFS 369.0 AF

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

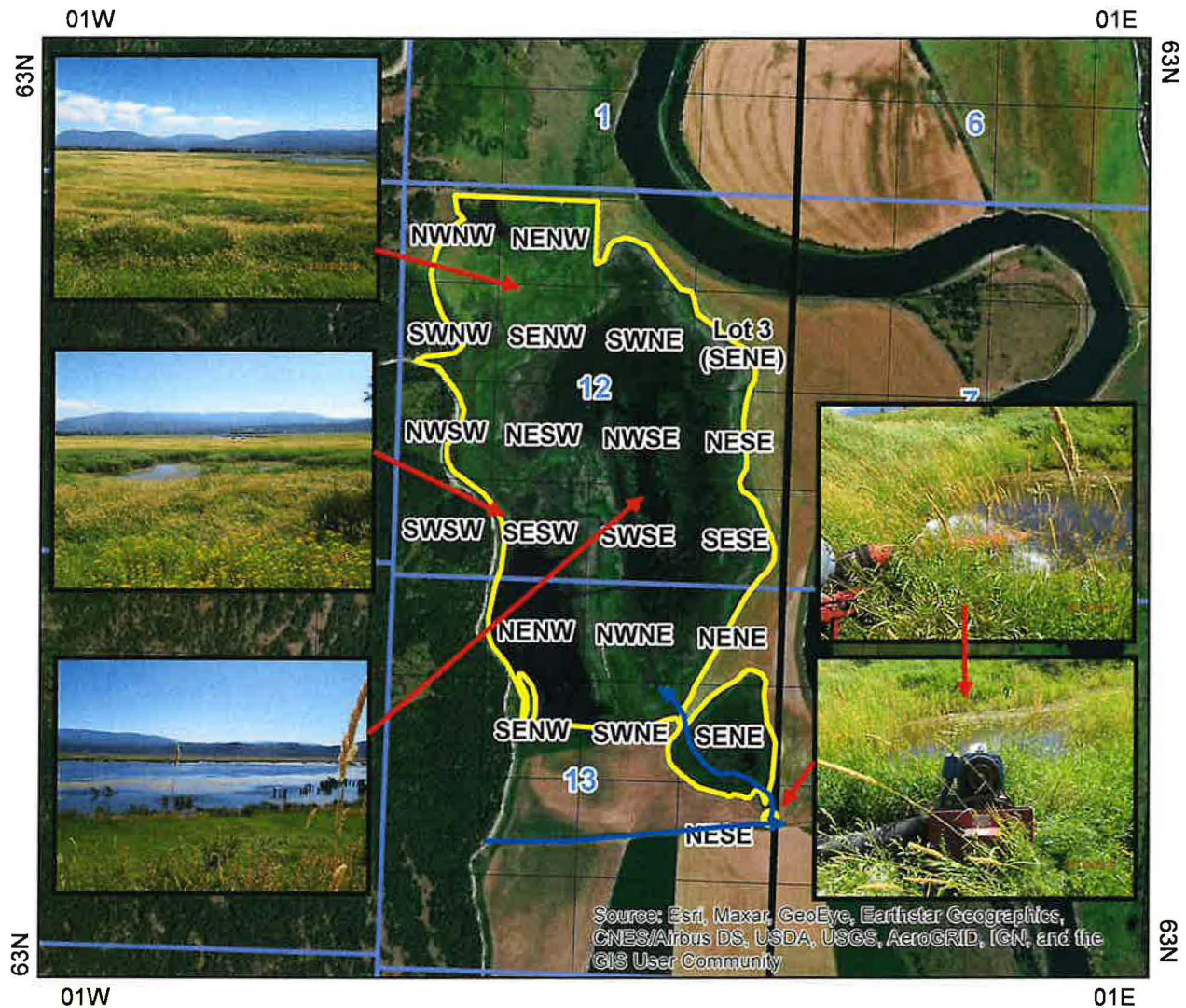
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION Luke Bates -

Field Examiner's Name  Date 11/1/2021
 Reviewer  Date 11/18/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
98-8017

WILDLIFE STORAGE system diagram.



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.275 0.55 1.1 Miles



MEMORANDUM

To: Water Right Permit 98-7918

From: Luke Bates 

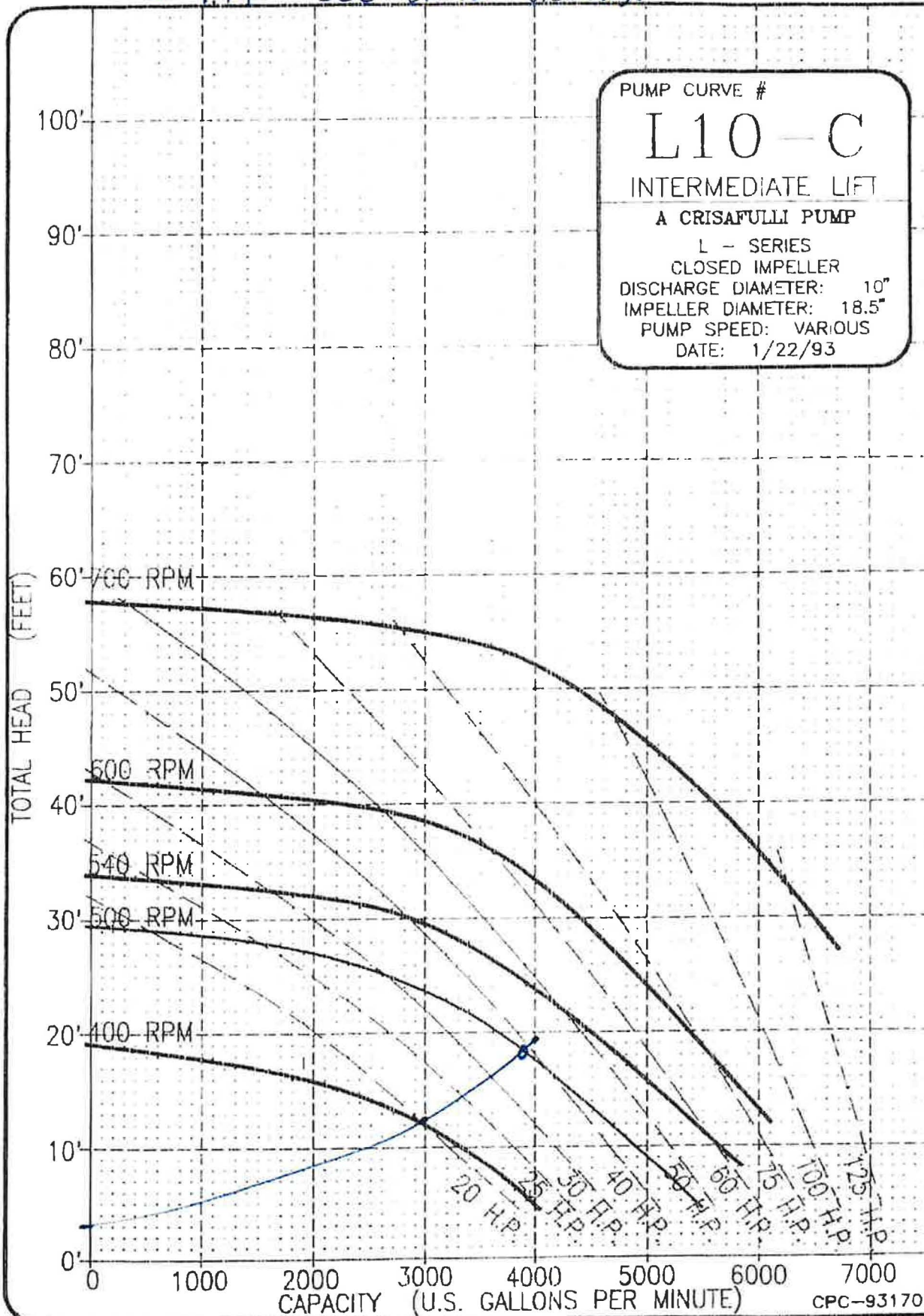
Date: 4/9/2020

Re: Permit for Licensing to Appropriate Water within the State of Idaho.

A permit at time of field exam review and licensing was in-process for wildlife storage use in the name of The Nature Conservancy. The applicant's representative, Kennon McClintock provided a Crisafulli 50 hp pump curve with email comments stating they should be pumping 3,600 gpm at 500 rpm.

I contacted a Crisafulli pump technician at (406)-365-3393 <https://www.crisafullipumps.com/> , and given the operating parameters provided by applicant the Crisafulli pump technician stated using that model pump would produce 3,900 gpm conforming to specifications provided (50hp, 3' lift, 500' of 12" discharge, 500 rpms). As such, 3,900 gpm will be used in flow measurement calculations at time of licensing.

3' lift 500' of 12" discharge



Total Storage Calculations

FILE NUMBER	98-7918
REVIEWER	Adam Frederick
DATE	10/29/2019

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

Surface Area (AC.)	100	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	1	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	100.0	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	102.4	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	202.4	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Total Storage Calculations

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User Input
Calculated value
Formula Explanations

Surface Area (AC.)	100	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	400.0	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	102.4	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	502.4	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Total Storage Calculations

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REVIEWER	Adam Frederick
DATE	10/29/2019

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User Input
Calculated value
Formula Explanations

Surface Area (AC.)	369	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	2	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	738.0	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: If a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the Irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	378.0	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	1116.0	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

98-80176

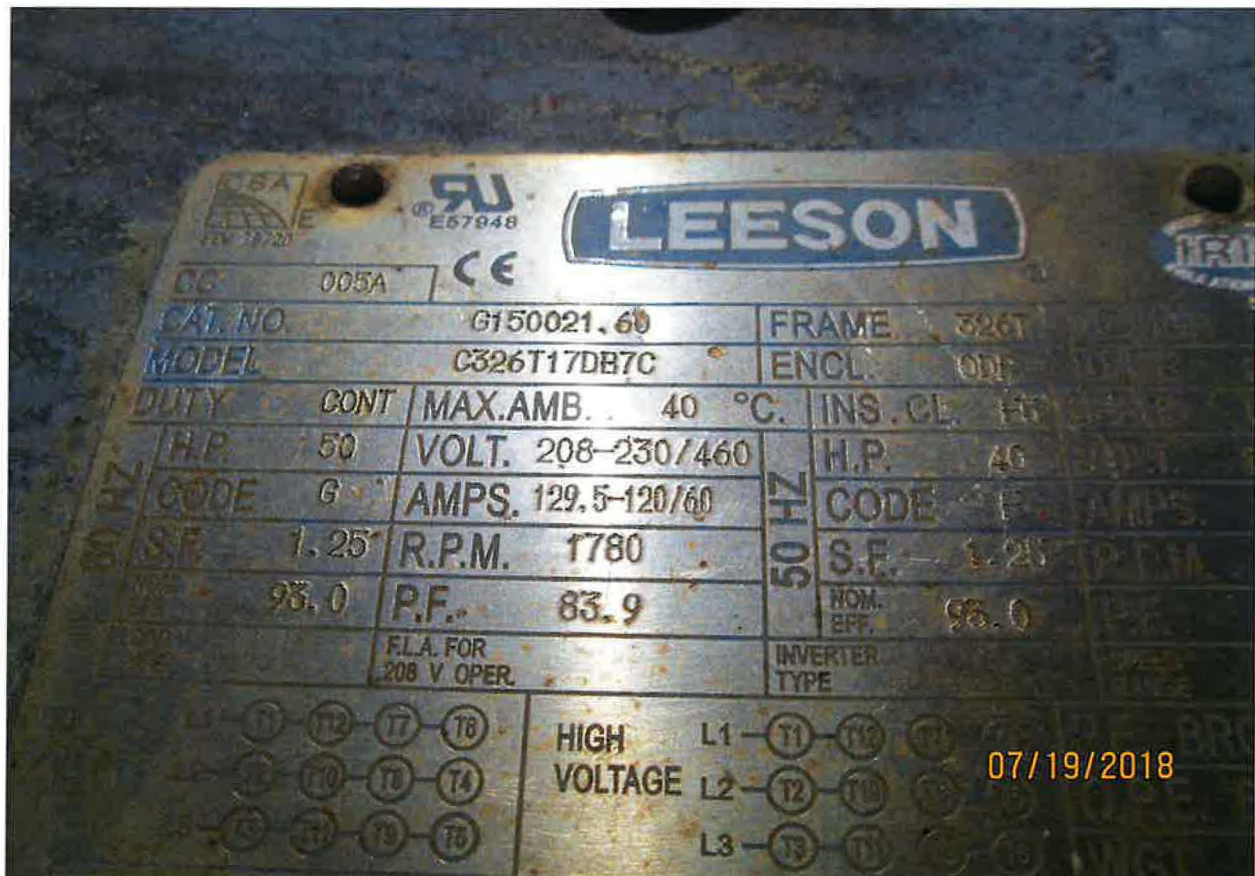
11/ 1/2021



POD – PUMPING STATION 50 HP PUMP



POD - PUMP



50 HP PUMP



FLOW MEASUREMENT



FLOW MEASUREMENT



FLOW MEASUREMENT



DISCHARGE PIPE TO WETLAND POU



WETLAND POU





WETLAND POU





WETLAND POU

